

DEPT. NAT. RES & ENV



PE902876

INTERSTATE/SHELL GARVOC NO.1

WELL COMPLETION REPORT

INTERSTATE/SHELL GARVOC NO.1 WELL

OTWAY BASIN, VICTORIA

WELL COMPLETION REPORT

by

R.B. Leslie (Interstate Oil Ltd.)

and

B.H. Sell (Mines Administration Pty. Ltd.)

Melbourne
October, 1968

C O N T E N T S

		<u>Page</u>
I	SUMMARY	
	(1) Drilling	1
	(2) Geological	1
II	INTRODUCTION	2
III	WELL HISTORY	3
	(1) General Data	3
	(2) Drilling data	4
	(3) Formation Sampling	6
	(4) Logging and Surveys	7
	(5) Testing	8
IV	GEOLOGY	9
	(1) General	9
	(2) Stratigraphic Table	10
	(3) Lithologic Description	11
V	REFERENCES	14
VI	ENCLOSURES	
	(1) Map showing location in relation to Structure Contours	
	(2) Cross section Flaxmans No.1 - Garvoc No.1	
	(3) Composite Well Log 2 SWEETS.	
	(4) Copies of Test Charts	
	(5) Copies of Induction - Electric logs, Sonic Gama-Ray logs, Micro logs and Continuous Dipmeter.	

A P P E N D I C E S

I	Palaentological Report
II	Palynological Report
III	Water Analysis
IV	Gas Analysis
V	Core Descriptions and Analyses
VI	List of Schlumberger Logs and Interpretations
VII	Details of Drill Stem Testing

APPENDIX 5:

CORE DESCRIPTIONSINTERSTATE/SHELL GARVOC NO.1

by

B.H. Sell and D.A. Short,
Mines Administration Pty. Limited

Equipment: Hughes "J" type 20 ft. barrel
cutting a $3\frac{3}{8}$ " diameter core.

Core No.1 Interval: 4526 - 4546
Rec.: 13 feet - 65%

4526'-4532'9" Sandstone white, mostly coarse grained, some medium and some pebbly to conglomeratic. It is composed dominantly of clear and white quartz, with minor coloured cherty lithic fragments and few shaley fragments and thin streaks. The matrix is soft white clay, slightly calcareous in a few patches. In spite of the clay matrix, porosity and probably permeability are very good. Grains are sub-angular to sub-rounded and sorting is only fair.

4532'9"-4539' Sandstone as above, but more even grained and without pebbles. It is medium grained at the top of this interval and grades to coarse. A bed containing some shaley clasts occurs at 4536'. Porosity and permeability are good from 4535'-4539'.
Dip: Bedding is irregular and most is current bedded at about 20°. True dip may be about 5° - 10°.
Signs of Oil/Gas: Some patches of blue-white to yellowish fluorescence, but most of the core has no shows.

Core No.2 Interval: 4990'-4999'
Rec.: 7'9" - 86%

4990-4997'9" Quartz mica schist medium grey with veins and aggregations of milky quartz. Bedding is irregular and highly contorted.
Dip -
Signs of Oil/Gas: Nil.

INTERSTATE/SHELL GARVOC NO.1 WELLSIDEWALL SAMPLE DESCRIPTIONS

by

Shell Development (Australia) Pty. Ltd.

<u>Depth below K.B.</u>	<u>Description</u>
3076'	<u>Shale</u> , compact, dark grey, very silty; quartzitic, with very fine grains of white Feldspar, Coal specks; vague laminations. 2" size.
3133'	sub-lithic <u>Sandstone</u> , no visible porosity, salt and pepper colour, very fine to fine grained, well sorted, subangular and spherical grains, abundant white Clay and Carbonate cement, brittle; abundant dark grey lithics (Chert), very rare chloritic light greenish lithics, Coal flecks. $\frac{1}{2}$ " size, broken.
3262'	<u>Siltstone</u> , compact, grey, very clayey (cement) quartzitic, with abundant fine grains of Quartz, white Feldspar and black lithics, slightly carbonaceous and micaceous. 2" size.
3334'	<u>Siltstone</u> , compact, salt and pepper colour, very clayey (cement), very fine Feldspar and lithic grains. $1\frac{1}{2}$ " size.
3422'	<u>Coal</u> , black, slightly clayey, fissile. 2" size, broken.
3549'	<u>Siltstone</u> as 3334', regularly finely laminated. $1\frac{1}{2}$ " size.
3588'	<u>Siltstone</u> , as 3334', more clayey, regular thin whitish laminae. $1\frac{1}{2}$ " size.
3642'	<u>Siltstone</u> to very fine quartzitic <u>Sandstone</u> , slightly porous, whitish; clayey to calcareous cement, friable. 1" size.
3763'	<u>Shale</u> , grey, silty, slightly carbonaceous, brittle but consolidated. 1" size, broken.
3841'	<u>Siltstone</u> to very fine quartzitic <u>Sandstone</u> , as 3642' with rare very fine dark or greenish lithics. 1" size.
3940'	quartzitic <u>Sandstone</u> , slightly porous, whitish, very fine to fine grained, well sorted, angular; silty, clayey to calcareous cement, friable but compact, with a few dark grey lithics (Chert) and white Feldspar; 1 laminae (2mm) with Coal specks. 1" size.

- 4008' quartzitic Sandstone, whitish to light grey, somewhat light greenish, as 3940', grading into Siltstone, with carbonaceous specks and rare greenish lithics.
1" size, broken.
- 4078' quartzitic Sandstone, as 3940'
 $\frac{3}{4}$ " size.
- 4184' Shale, dark grey, silty, micaceous, carbonaceous; compact.
1" size, broken.
- 4208' Siltstone to quartzitic Sandstone, light grey, as 3642', with dark grey clayey to carbonaceous laminae rare orange grains (Zeolite ?).
1" size; broken.
- 4272' quartzitic Sandstone, as 3940'. Half the core is marked by very thin, regular, black carbonaceous laminae.
1" size.
- 4346' Siltstone to quartzitic Sandstone, as 3642'
1" size, broken.
- 4394' Shale, light grey, very silty, compact.
 $1\frac{1}{2}$ " size, broken
- 4423' Shale, as 4184', with irregular carbonaceous laminae.
 $1\frac{1}{4}$ " size, broken
- 4489' Shale, dark grey to black, very carbonaceous; compact.
 $\frac{3}{4}$ " size, broken.
- 4599' quartzitic Sand, porous, white, fine to medium grained, well sorted, subangular, fair sphericity; scarce white clayey cement, friable; very rare light brown lithics.
 $1\frac{1}{2}$ " size.
- 4637' quartzitic Sandstone, porous, white medium to coarse grained, well sorted, subangular to subrounded, high sphericity; a little white clayey cement, friable.
 $1\frac{1}{2}$ " size.
- 4705' quartzitic Sandstone, porous whitish, very fine to medium grained, poorly sorted, subangular, moderate sphericity; white clayey cement, friable, very rare dark grey and pale greenish lithics.
2" size.
- 4756' quartzitic Sandstone, as 4637', but medium grained, very well sorted.
 $1\frac{1}{2}$ " size.
- 4798' quartzitic Sandstone, as 4705'
 $1\frac{1}{2}$ " size, broken.
- 4851' quartzitic Sandstone, white, as 4705', but with a few dark grey and orange (Zeolite ?) lithics.
 $\frac{3}{4}$ " size, broken.

- 4878' quartzitic Sandstone, as 4851', but fine to medium grained, moderately sorted, abundant white clayey cement; with a carbonaceous streak (3 mm).
1" size, broken.
- 4914' quartzitic Sandstone, as 4705', but with rare dark grey and orange lithics
1 $\frac{1}{2}$ " size.
- 4940' quartzitic Sandstone, as 4705', rare dark grey lithics carbonaceous specks.
1 $\frac{3}{4}$ " size.
- 4964' Shale, as 4184', with small lensoid streak of whitish Siltstone.
1 $\frac{1}{2}$ " size, broken.

CORE LABORATORIES AUSTRALIA LTD.

Petroleum Reservoir Engineering
BRISBANE, AUSTRALIA

Company MINES ADMINISTRATION PTY. LTD. Formation _____ Page 1 of 1
 Well GARVOC NO. 1 Cores CONVENTIONAL File AP-1-173
 Field _____ Drilling Fluid _____ Date Report 17 JULY '68
 xCountry VICTORIA State AUSTRALIA Elevation _____ Analysts N F
 Location 5 MILES SW TERANG, OTWAY BASIN Remarks _____

CORE ANALYSIS RESULTS

(Figures in parentheses refer to footnote remarks)

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS		POROSITY PERCENT	RESIDUAL SATURATION		PROBABLE PRODUCTION	REMARKS
		HORIZONTAL	VERTICAL		OIL % VOLUME % PORE	TOTAL WATER % PORE		
1	4533' 9" - 4534'		2.9	13.2	0.0	82.6		SD, WHITE, FN GRN, ARGIL.
2	4538' 4" - 4538' 8"	661		22.7	0.9	73.6		SD, WHITE, MED GRN, ARGIL.

NOTE:

(*) REFER TO ATTACHED LETTER.
 (1) INCOMPLETE CORE RECOVERY—INTERPRETATION RESERVED.

(2) OFF LOCATION ANALYSES—NO INTERPRETATION OF RESULTS

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc., and its officers and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operation, or profitableness of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

Petroleum Technology Laboratory, Bureau of Mineral Resources, Geology and Geophysics, Canberra

CORE ANALYSIS RESULTS

NOTE: (i) Unless otherwise stated, porosities and permeabilities were determined on two plugs (V&H) cut vertically and horizontally to the axis of the core. Ruska porosimeter and permeameter were used with air and dry nitrogen as the saturating and flowing media respectively. (ii) Oil and water saturations were determined using Soxhlet type apparatus. (iii) Acetone test precipitates are recorded as Neg., Trace, Fair, Strong or Very Strong.

WELL NAME AND NO. GARVOC No. 1

DATE ANALYSIS COMPLETED 5th August, 1968.

Core No.	Sample Depth		Lithology	Average Effective Porosity two plugs (% Bulk Vol.)	Absolute Permeability (Millidarcy)		Average Density (gm/cc.)		Fluid Saturation (% pore space)		Core Water Salinity (p.p.m. NaCl)	Acetone Test	Fluorescence of freshly broken core
	From	To			V	H	Dry Bulk	Apparent Grain	Water	Oil			
1A	4528'1"	4528'5"	Sandstone	18	N.D.	30	2.27	2.77	83	Nil	600	Neg.	Rare tiny, yellow speckles.
1B	4530'	4530'4"	"	21	N.D.	372	2.10	2.66	72	Nil	600	Neg.	"
1C	4532'2"	4532'6"	"	19	N.D.	203	2.17	2.68	88	Nil	700	Neg.	"
1D	4534'2"	4534'6"	"	17	N.D.	3	2.21	2.67	74	Nil	600	Neg.	"
1E	4536'	4536'4"	"	17	N.D.	24	2.21	2.67	91	Nil	700	Neg.	"
1F	4538'	4538'4"	"	19	N.D.	553	2.16	2.67	96	Nil	700	Neg.	"
2	4995'7"	4996'	Quartzite	1	Nil	Nil	2.68	2.72	N.D.	N.D.	N.D.	Neg.	Nil.

Remarks: - Core 1 received in a sealed condition

General File No. 62/399
Well File No. 68/2020